

AMENDMENTS TO THE CLAIMS

Claims 1-9 (Cancelled.)

10. (Original) A method of forming a MOS transistor on a semiconductor material of a first conductivity type, the method comprising the steps of:

forming a layer of material of the first conductivity type on the semiconductor material, the layer of material having silicon, germanium, and carbon;  
forming an insulation layer over the layer of material;  
forming a layer of conductive material on the insulation layer;  
etching the layer of conductive material to form a gate; and  
forming spaced-apart source and drain regions of a second conductivity type in the layer of material on opposite sides of the gate.

11. (Original) The method of claim 10 wherein the forming a layer of material step includes the step of growing the layer of material on the semiconductor material.

12. (Original) The method of claim 10 wherein the forming a layer of material step includes blanket depositing a layer of silicon germanium carbon over the semiconductor material.

13. (Original) The method of claim 10 wherein  
an isolation region adjoins the semiconductor material, the isolation region having a top surface; and  
the forming a layer of material step includes the step of selectively epitaxially growing the layer of material on the semiconductor material, the layer of material having a top surface that lies below the top surface of the isolation region.

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14. (Original) The method of claim 13 wherein the semiconductor material has a bottom surface that is substantially coplanar with the top surface of the isolation region.

15. (Original) The method of claim 10 wherein the forming a layer of material step includes the steps of:

removing a portion of the semiconductor material to expose an etched surface of the semiconductor material; and

growing the layer of material on the etched surface of the semiconductor material.

16. (Original) The method of claim 10 wherein the forming a layer of material step includes the steps of:

removing a portion of the semiconductor material to expose an etched surface of the semiconductor material; and

blanket depositing a layer of silicon germanium carbon over the etched surface of the semiconductor material.

17. (Original) The method of claim 12 wherein the forming a layer of material step includes the steps of:

removing a portion of the semiconductor material to expose an etched surface of the semiconductor material, the etched surface of the semiconductor material lying below the top surface of the isolation region; and

epitaxially growing the layer of material on the etched surface of the semiconductor material.

18. (Original) The method of claim 15 and further comprising the step of forming a layer of cap silicon on the layer of material prior to the formation of the insulation layer.

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19. (Original) The method of claim 10 wherein the layer of material has a substantially uniform concentration of carbon atoms.

20. (Original) The method of claim 10 wherein the layer of material has a non-uniform concentration of carbon atoms, and includes a surface region of a heavy concentration of carbon.